**Monsters in the Water**

**Subject(s):** Science **Grade:** 4

**Teacher(s):** Shari Brathwaite  **School:** P.S./I.S. 323

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| **LESSON ELEMENT** |
| 1. **Common Core Learning Standard(s) Addressed:** CCSS.ELA-LITERACY.SL.4.1 Grade 4 UNIT 1 ANIMALS AND PLANTS IN THEIR ENVIRONMENT LE 7.1a,b LE 7.1b,c |
| 1. **Learning Target(s):**  Students will understand how groundwater can become contaminated, and end up in our drinking water by creating a miniature watershed and polluting it. |
| 1. **Relevance/Rationale:** Students should get a clear understanding of how careless use and disposal of harmful contaminants above the ground can potentially end up in the drinking water below the ground. |
| 1. **Formative Assessment Criteria for Success:** Creating a watershed in groups. Discussing the outcomes of the experiment and documenting them in their science journals. |
| 1. **Activities/Tasks:**   *Motivation/Mini Lesson:*  Watch animated video on groundwater  [*http://www.kingcounty.gov/environment/waterandland/groundwater/education/animation.aspx*](http://www.kingcounty.gov/environment/waterandland/groundwater/education/animation.aspx)  Show students NYC watershed via power point. (water 2-3.pptx). Show students mini watershed that they will be creating. Ask essential question: *How does our groundwater become contaminated?*  *Make the Watershed:*  Pour 1/4" of white sand in the bottom of each cup completely covering the bottom of the container. Pour water into the sand, wetting it completely. Flatten the modeling clay and cover 1/2 of the sand with the clay. Use the aquarium rocks to form the next layer of earth. To one side of your cup, have students slope the rocks, forming a high hill and a valley. Now pour water into your aquifer until the water in the valley is even with your hill.  *Contaminate the Water:*  Use the food coloring and put a few drops on top of the rock hill as close to the inside wall of the cup as possible. They will see that the color spreads not only through the rocks, but also to the surface water and into the white sand at the bottom of their cup.  *Discuss the Outcomes:*  In their science journals, students will write the materials and steps to making the watershed and contaminating it. Students will discuss how the contaminate moved throughout the layers of the watershed (not only through the rocks, but also to the surface water and into the white sand at the bottom of their cup). Students will discuss other pollutants that they see around their home and school. |
| 1. **Resources/Materials:**   1 clear plastic cup  1 piece of modeling clay  White play sand  Aquarium gravel or small pebbles  Red food coloring  1 bucket of clean water and small cup to dip water from bucket |
| 1. **Access for All:** Activity is done in groups. Activity is hands on and relates to real world issues. |
| 1. **Modifications/Accommodations:**  Lesson will be modified as needed. For ELL students, review key vocabulary (watershed, contaminates, pollutants, groundwater, drinking water, etc) prior to the lesson. |

**Follow up:**

Trip to Environmental Study Center located in Brooklyn offers educational hands on tours and a wide variety of information about the environment. Environmental Study Center aims at educating students how to co-exist with nature and make responsible environmental decisions.

P.S./I.S. 323

**Science Notebook Rubric**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Teacher: Ms. Brathwaite

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|  | **4** | **3** | **2** | **1** |
| **Completion of Required Sections** | All required sections are complete (materials, directions, drawings). | One required section is missing. | Two or three required sections are missing. | More than three required sections are missing. |
| **Neatness** | Overall notebook is kept very neat. | Overall notebook is kept in a satisfactory condition. | Overall notebook is kept in a below satisfactory condition. | Overall notebook is unkept and very disorganized. |
| **Essential Question** | Essential question is answered satisfactorily. | Essential question is mostly answered. | Essential question is answered but there are clear misunderstandings. | Essential question is not answered properly and there are clear misunderstandings. |

Total---->\_\_\_\_